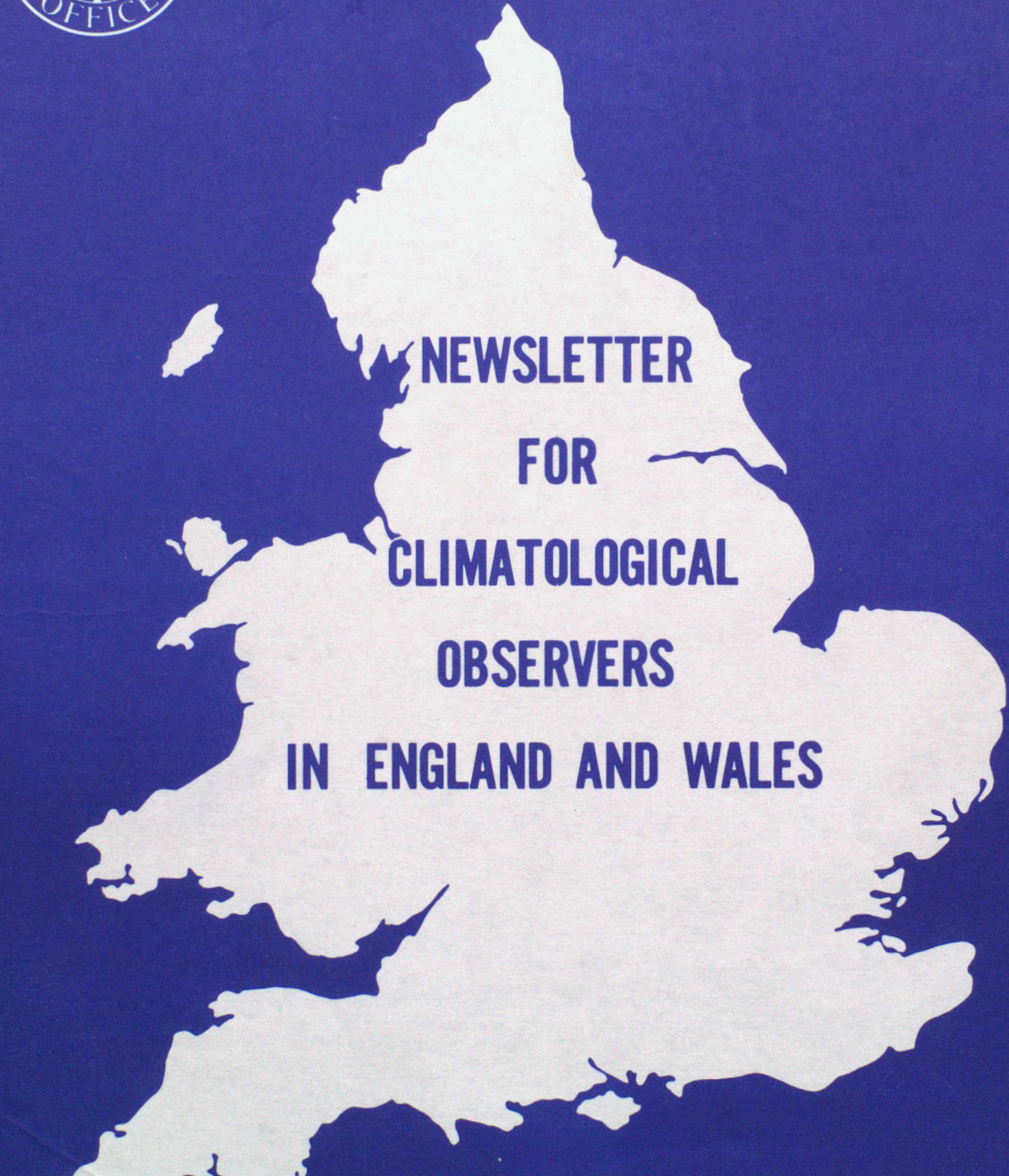
METEOROLOGICAL OFFICE



NEWSLETTER
FOR
CLIMATOLOGICAL
OBSERVERS
IN ENGLAND AND WALES

METEOROLOGICAL OFFICE

NEWSLETTER

FOR

CLIMATOLOGICAL OBSERVERS

IN

ENGLAND AND WALES

NO 16

DECEMBER 1986

Produced by:

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Observational Requirements
and Practices Branch
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OBSERVERS NEWSLETTER - 16th Edition

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EDITORIAL

Welcome to the 16th edition of the Climatological Newsletter. Firstly let me wish you all a very happy New Year.

For those of you new to the 'club' the Newsletter is produced annually and is distributed in December or January each year. After my comments in the last editorial it was very pleasing to receive three letters for inclusion in this latest edition. The letter from Mr Garrad the Borough Meteorologist at Hastingson pages 20, 21 gives an interesting account of the history of his station. Also, partly as a result of this letter, we have written an article on The Weather Diary on pages 12-15 which we hope will be of interest to you all. We very much hope that these letters will prompt further correspondence from you which we look forward to including in the next Newsletter.

Many congratulations to all those observers who received an award in 1986 (details on page 5). Your efforts over such a long period are very much appreciated. I hope you will continue to enjoy observing the weather for many years to come.

You should have by now all received details, together with an application form, on the observer courses we are running in 1987. However, in case your letter went astray or has been mislaid the details of the four courses can be found at the foot of page 16. On the same page are details of The Royal Meteorological Society Field Study Courses on Weather to be held in 1987.

Finally, I very much hope you will enjoy reading this latest Newsletter. We would, however, be very interested to have your views on its content together with any subjects you would like covered in subsequent editions.

J Gloster

NEWS OF STATIONS AND OBSERVERS

STATION OPENINGS AND CLOSURES

Over the past twelve months we are sorry to report the loss of five stations from the network. Much as we would have liked these stations to have been able to continue their co-operation we can at least draw some comfort from the valuable long period of observations that most have supplied. On page 4 is a map showing the location of all the stations that are mentioned below.

WADDON

Major redevelopments at the Thames Water Authority site at Waddon (Surrey) has forced the closure of this station which commenced measurements in 1958.

AYLESBURY

After over 40 years co-operation the Agro-Met station at Aylesbury (Bucks) has closed due to staff shortages. This leaves Grendon Underwood as the only climatological station left in Buckinghamshire.

SHELTON

The climatological station at Shelton (Shropshire) run by the Seven Trent Water Authority has reduced its commitment to rainfall reading only.

CARMARTHEN

The Agro-Met station at the Carmarthen Technical and Agricultural College (Dyfed) has closed after nearly 25 years co-operation, once again, due to staff shortages. We are however fortunate in that we already have an established station nearly at Towy Castle which has helped cushion the loss of this station.

RAYLEIGH

A site change has necessitated the closure of the climatological station at Rayleigh (Essex). It is hoped the new site, approximately 3 miles from the old one, will become operational in December.

To help cushion the loss of the above stations we are very pleased to welcome three new stations into the voluntary network.

LLANARMON DYFFRYN CEIRIOG

In July observations commenced from LLANARMON D.C.(Clwyd) a station set up by Mr G.J.Edwards. His interest in meteorology however goes back considerably further than this as his own 30 year record prove.

TRINITY

Climatological observations from the Howard Davis Farm, Trinity, Jersey commenced on 1st November 1986. However this is by no means a new station as they have already been supplying us with rainfall data since 1935.

CLARBOROUGH

The climatological station at Clarborough (Notts) run by Mr D S B FELLOWES commenced observations on 1st December 1986. Mr Fellowes was the founder of the weather station at Wingerworth (Derby) back in 1968. He was the main observer there until 1984 when he left the area and so handed over the observing responsibilities to the present observer, and his former deputy, Dr I R D Proctor. We are pleased Mr Fellowes has been able to rejoin the voluntary network again.

In the next issue we hope to be able to bring you further details on the following stations who, by which time, should be well into the swing of observing.

Halesowen - West Midlands.

Flat Holm - A small island in the Bristol Channel.

Myerscough College of Agriculture - Bilsborrow, Lancashire

Rettendon - Essex (replacing Rayleigh)

SITE CHANGE

The Agro-Met station at Silpho Moor, run by the Forestry Commission, was transferred in August to a new location approximately 4 miles SSW of the old site. The new station will be know as Wykeham Forest.

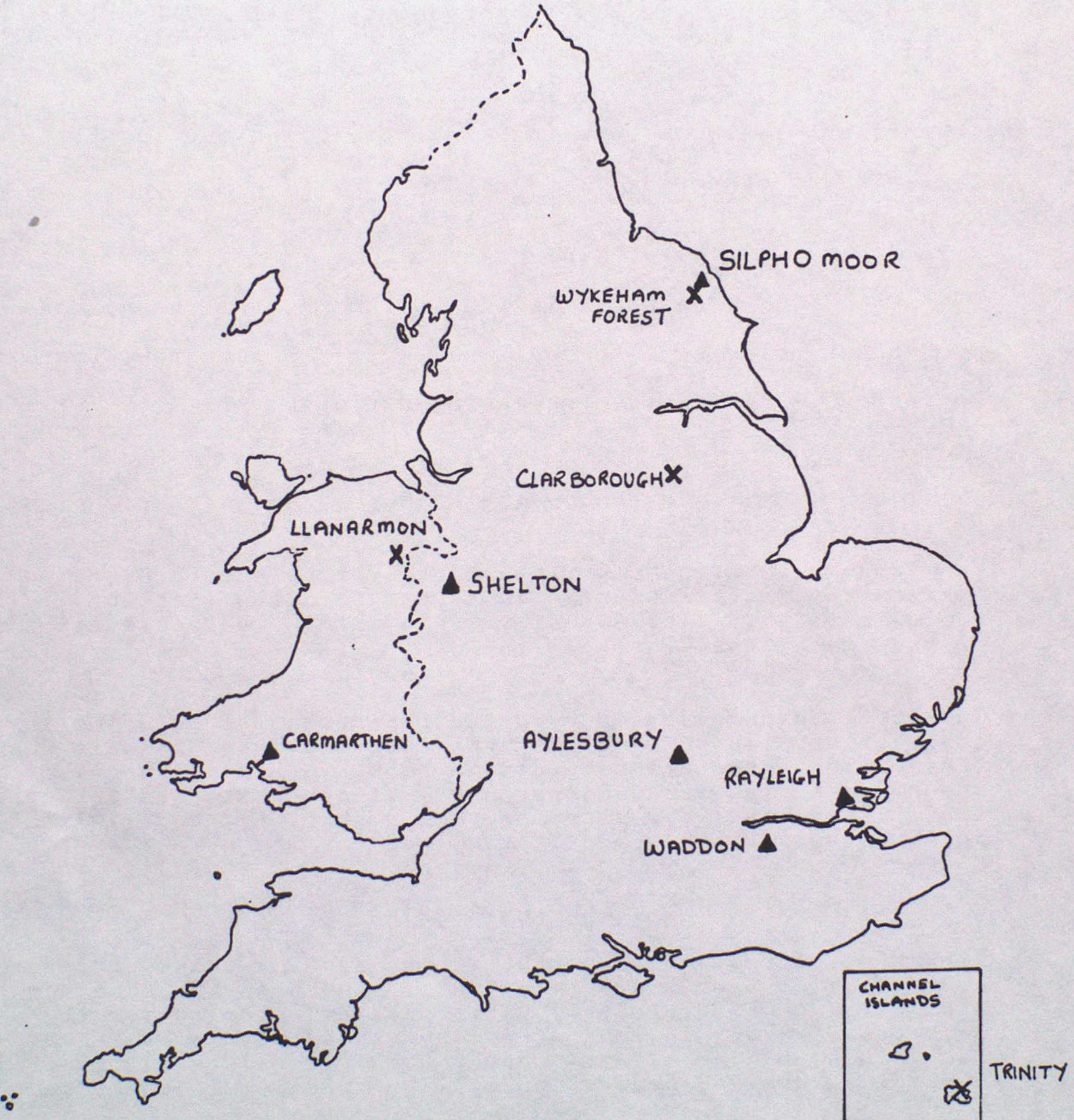
The move was necessary due to the retirement of Mr G.Tomlinson the observer at Silpho Moor. Mr Tomlinson has been the main observer there since the station opened in 1956. He was also one of the observers at the first Silpho Moor station which was set up in 1950. This station was transferred a short distance in 1956 to a better exposed site where it remained for the next 30 years.

OBITUARIES

It was with great sadness that we learnt Mr E Oakley had passed away on 21 September 1986. Mr Oakley had been the observer at the HARTBURN GRANGE (Cleveland) climatological station for the past seventeen years. In 1984 he was presented with a book award in recognition of the high standards he had consistently maintained. His enthusiasm and dedication will be greatly missed by us all.

In December 1986 we heard the sad news of the death of Mr G.A.Clark the former Mayor of Ross-on-Wye. It was through the endeavours of Mr Clark, in his mayoral project, that the Ross-on-Wye station re-opened in 1985 after a break of 10 years. Unfortunately ill health prevented Mr Clark from attending the official opening of the station, carried out by Ian McCaskill, London Weather Centre, in May of that year.

THE MAP BELOW SHOWS THE STATIONS WHICH HAVE OPENED OR CLOSED SINCE THE LAST NEWSLETTER WAS ISSUED


SILPHO MOOR
WYKEHAM FOREST
CLARBOROUGH
LLANARMON
SHELTON
CARMARTHEN
AYLESBURY
RAYLEIGH
WADDON
CHANNEL ISLANDS
TRINITY

X = Station Opened

▲ = Station Closed

AWARDS TO OBSERVERS IN 1986

This year book awards have been made to 9 observers in appreciation of the quality of their observations and very long period of co-operation.

OBSERVER	STATION
MISS L.HAYDON	ALICE HOLT (SURREY)
MISS S.ASQUITH	BIDSTON (MERSEYSIDE)
R.SWINHOE	DURHAM
T.F.BENFIELD	GRENDON UNDERWOOD (BUCKS)
MRS J.M.BANNON	LOGGERHEADS (CLWYD)
MISS C.R.WINNER	LOGGERHEADS (CLWYD)
G.SALISBURY	SOUTHSEA (HANTS)
P.H.TRASK	STONE (STAFFORD)
A.A.MARCHANT	LECKFORD (HANTS)

A book award was also made to Mr G.Tomlinson commemorating his retirement after 36 years of weather observing at Silpho Moor (N.Yorks). In 1980 Mr Tomlinson was presented with an inscribed barograph in recognition of the consistently high quality observations and monthly returns he had supplied to us for over thirty years.

Two observers in Scotland were also presented with a book award.

OBSERVING AND COMPLETION OF FORMS

STATE OF GROUND

We understand that some confusion has arisen over the precise meanings of some of the code figures. Hopefully the revised definitions accompanying these notes will be of some help in resolving any difficulties.

STATE OF GROUND WITHOUT SNOW

When there is no snow on the ground select from the table below the code figure which best describes the state of ground.

0	Bare soil surface dry (but see codes 6 to 9 if the soil is cracked or there is dust or loose sand)
1	Bare soil surface moist
2	Bare soil surface wet (standing water in small or large pools on surface covering less than half the ground)
3	General area flooded (more than 50% water covered)
4	Bare soil surface frozen (but not ice covered)
5	Ground covered by glazed ice (formed by the freezing on impact of rain or drizzle).
6	Loose dry dust or sand not covering the area completely (less than 0.5 cm deep)
7	Loose dry dust or sand covering the area completely (less than 0.5 cm deep)
8	Moderate or thick cover of loose dry dust or sand covering the ground completely
9.	General area extremely dry with cracks.

Note: Codes 6 7 8 and 9 refer to the general area. They are fairly rare in the UK but have been observed, for example in a dry Spring in East Anglia (dusty soil) or along the Moray Firth (sand)

STATE OF GROUND WITH SNOW OR ICE

Most of the problems with the current state of ground codes are concerned with snow - is it wet or dry, even or uneven? The transition between categories is not a sudden one so there will always be borderline cases. Nevertheless, I hope the revised table and notes below will serve as a useful guide.

(All codes refer to the general area)

ICE OR HAIL BUT NO SNOW

0 No snow but icy patches caused by frozen slush, hail or the freezing of surface previously wetted by rain or drizzle. (But see code 5 in the "without snow" codes for glazed ice)

COMPACT OR WET SNOW/WET SLUSH

1 Covering less than one half of the ground
2 Covering at least one half of the ground but not completely
3 Covering the ground completely - Even depth
4 Covering the ground completely - Uneven depth

LOOSE DRY POWDER SNOW

5 Covering less than one half of the ground
6 Covering at least one half of the ground but not completely
7 Covering the ground completely - Even depth
8 Covering the ground completely - Uneven depth small drifts

DRIFTED SNOW

9 Snow covering ground completely - drift more than 1 metre deep and more than twice the average snow depth.

NB. The snow depth should be present if codes 2 to 4 or 6 to 9 are reported. Please refer to the Observer's Handbook 4th edition page 152 para 9.7 for guidance on reporting snow depth.

DRY SNOW is powdery and blows about even in light winds. It forms drifts easily and these drifts can just as easily be moved to a new location by a change in the wind direction. It can be shaken off clothes easily, leaving them dry. It is no good for making snowballs and snowmen!

WET SNOW can also form drifts, but only when it is falling and then only if the wind is strong. Once on the ground even strong winds are unlikely to shift it. When falling, wet snow sticks to vertical and horizontal surfaces. It is difficult to shake off clothes and leaves them damp. It compacts well, making good snowballs and snowmen.

Given the appropriate weather conditions, WET snow can change to DRY snow and vice versa. DRY becoming WET on a result of a thaw is the most obvious, but wet snow can be dried by a cold, dry wind.

When the top of a wet or dry layer of snow freezes then the code to be used is that applicable to the original snow type.

EVEN v UNEVEN Layers

The most obvious cause of an uneven snow cover (without deep drifts) is dry snow being blown by light winds. If the wind increases to moderate strength, this often results in a layer of snow which is flat and even - although the ground underneath is not. The net result is a considerable variation in snow depth. Any further increase in wind speed strips the snow from exposed areas and deposits it as drifts in sheltered areas. (See diagrams on page 10)

For all practical purposes an even layer of snow means an even depth.

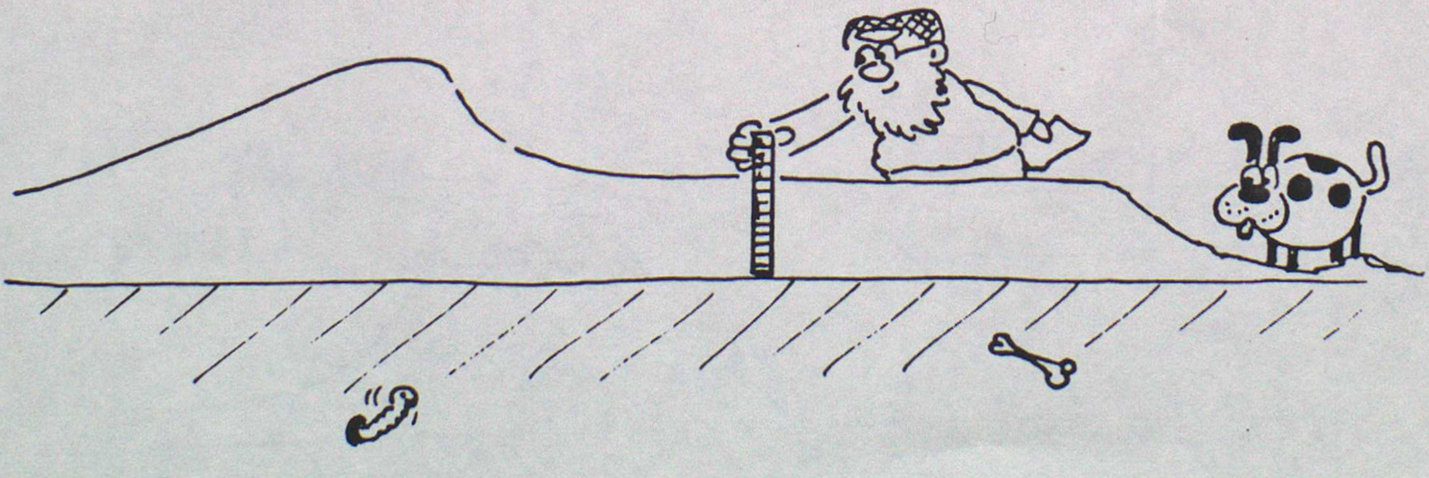
DEEP DRIFTS

Whether a drift is deep or not is often a matter of opinion with the observers perception of the transition from "uneven"layer (or depth) to "deep drifts" depending on the range of conditions normally experienced at the station. As a practical guide a deep drift should be more than 100 cm (1 metre, 3 feet, waist high) and be more than twice the average snow depth in the area.

The proportion of ground covered by snow can also cause problems. In areas of heather and rough grass, the falling snow initially covers all surfaces, but within a day or two, the snow falls off the tufts of grass and heather. If we interpret the rules too literally then many upland areas would have less days with complete snow cover than their lowland counterparts. For all practical purposes, the tufts of grass and clumps of heather should be ignored when assessing the proportion of ground snow covered.

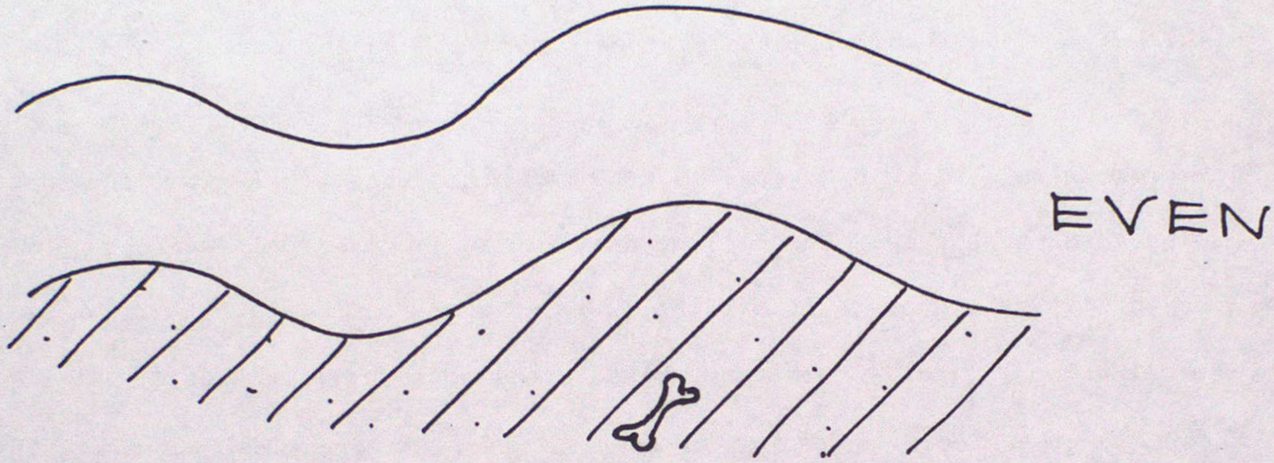
SNOW DEPTH

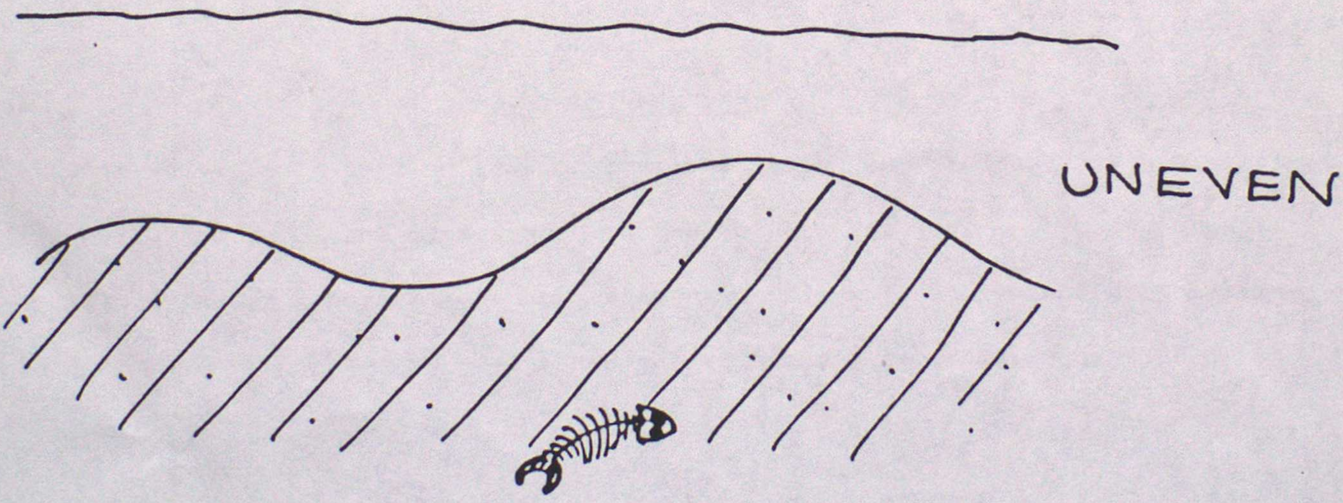
This is a very useful measurement and is made when half or more of the ground is snow covered. The area chosen for the measurement should be one which will give a good indication of the average condition in the area i.e. not a drift or an area which has been scoured by the wind.

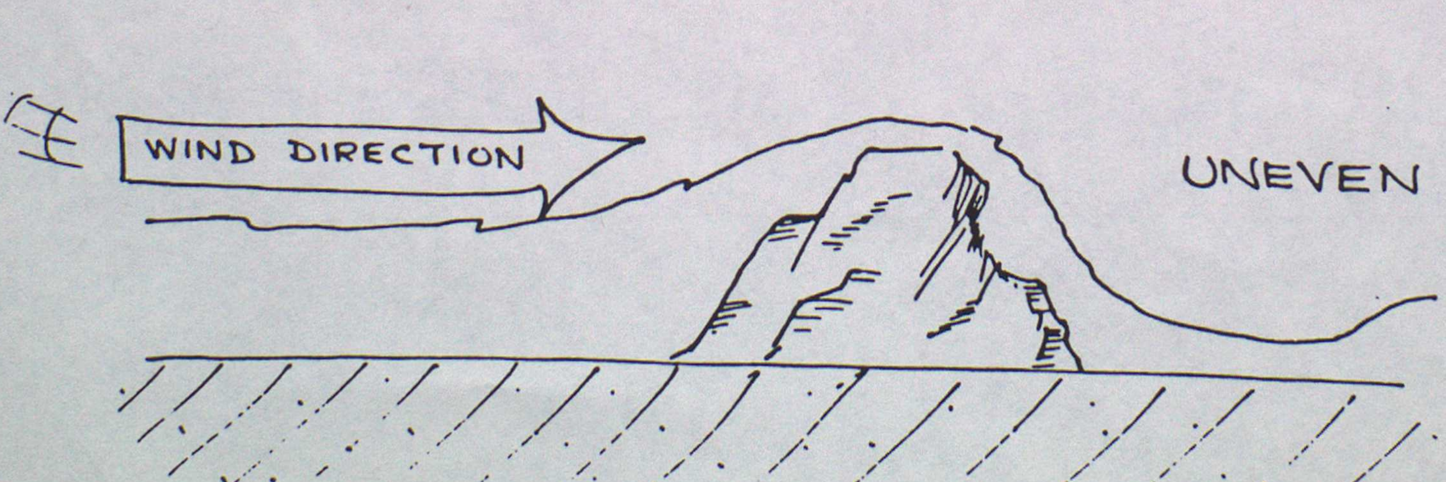


Snow cover

EVEN
and
UNEVEN






WIND DIRECTION
UNEVEN

THE CASE OF THE MISSING GREY ZERO'S

I expect there must have been quite a few puzzled expressions when you came to use the Monthly Return, Metform 3208B, which arrived in last years annual distribution back in October/November 1985.

It probably didn't take you long to spot something was different and soon found that the faint grey zeros in columns 55-61 and 69-72 and the shaded grey columns were now all blank.

What do we do now, I can hear you saying, have they changed the rules for filling in the form without telling us? Well as you are probably now aware we hadn't changed the rules. In the last reprint of Metform 3208B the grey zeros and shaded columns were unintentionally left off the master copy and unfortunately this error wasn't noticed until it was too late.

The remaining stock of these incomplete forms have been taken out of circulation so the monthly returns you received in October 1986 should have been correct. However if you have any of the incorrect forms left we would be grateful if you could destroy them.

THE WEATHER DIARY

We have had several requests, especially from our new observers, asking for advice on how the weather diary should be completed and what it should contain. The following notes are intended only as a guide to completing the weather diary as we realise that everybody has their own particular way of recording the days weather. Nevertheless we hope it will be of help to both new and experienced observers alike.

The weather diary is completed on the reverse of Metform 3208B and constitutes a very important part of a stations record. It is frequently used to help answer a wide range of climatoligical enquiries and is also a useful guide when checking possible errors on the return. For instance, an observer may have mistakenly entered the wrong figures in the sunshine total in columns 66-68. If the figures entered were throught to be too low a check on the weather diary 'sunny all day' would confirm the error.

Two examples of a completed weather diary, from the many excellent ones we receive, are shown on pages 14, 15. You will see that one is completed in plain language and the other in Beaufort letters. Both diaries give a clear and concise picture of what has happened during the day including times of commencement and ending of precipitation, thunderstorms, hailshowers and other interesting phenomena.

If you are able to complete the weather diary you can use either method or indeed, if you wish, a mixture of both plain language and Beaufort letters. We realise that some of our observers are unable to complete a diary because of work commitments. In such cases even a limited diary would be very much appreciated. The diary could be confined to the reporting of weather phenomena such as thunderstorms, strong winds causing damage to property or any other unusual weather feature which is noticed during the day.

Listed below are some notes and suggestions on the layout and content of the diary to assist in its completion.

1. The diary can be completed in Beaufort letters, plain language or a mixture of both.

2. It should give a brief description of the whole day noting all the weather features which occured.

3. What whould be included in the weather diary?

(i) Times of beginning and ending of precipitation, fog, thunderstorms, gales and other phenomena.

(II) An indication of cloud cover and development.

(III) Anemograph stations can include the maximum mean speed and gust with direction during a gale.

(IV) Notes on unusual weather phenomena such as coloured dust after a period of rain.

(V) Details of extreme weather conditions, gale force winds, large hailstones etc which cause damage to trees, fences and property. This type of information is particularly useful to our enquiry section. If you report this type of information in the Weather Diary as apposed to including notes or newspaper cuttings please indicate whether you actually observed the 'event' or if it being reported 'second-hand'. This is especially important if it relates to an event 'off-site'.

(VI) Any change in the character of ice and snow cover during the day through, for example, melting, re-freezing or increase of snow to more than half cover. This type of detail is also extremely useful so if you can manage to report this type of information we would be very grateful.

If your station retains long term weather records we would be interested to hear of any records that may have been broken during a particular month with details of the date and figures involved. This information can be jotted down on a separate piece of paper and enclosed with the monthly return.

We would also welcome any reports of interest from your local papers. These may cover severe weather conditions such as gales, floods, snow and frost or indeed any other weather feature of interest.

We would like to take this opportunity to thank all our observers who complete the weather diary for their commendable efforts which are very much appreciated. Keep up the good work.

STATION LONG ASHTON D.C.N.N. 8678 MONTH MAY YEAR 1986

Date	Barometric pressure at mean sea level in millibars and tenths	WEATHER DIARY (MIDNIGHT TO MIDNIGHT) Before 0900 GMT	After 0900 GMT
01		b	b
02		cz	c, bc from 1020
03		c, ir_0 from 0520, ir from 0700	rr until 0945, c, bc from 1145, b from 1500
04		ir 0250-0340, bc, c from 0725 pr_0 from 0855	pr_0 until 0915, bc, c from 0925, pr_0 1030-1035, c, b 1225-1240, c, ir_0 1430-1600, c, pr 1750-1815, c
05		rr 0055-0340, c, bc from 0800	bc, b 1130-1420, bc
06		pr_0 0450-0540, bc	bc
07		bc	c, bc from 1000, pr_0 1210, bc, pr_0 1335-1355, c, tlr_0 1405-1410, tlr_0 1420, t 1445, tlr_0 1500-1510, c, bc from 1630, pr_0 1920-2030
08		bc, c from 0825	c, bc from 0935, pr_0 1655-1710, bc
09		c, rr 0620-0720, ir_0, c	c, bc 1030-1200, c, pr_0 1650-1700, c, ir_0 1925-2020, c
10		c, ir 0600-0620, bc	bc, c 1350-1550, bc, c from 1620, ir_0 from 1720
11		ir_0 until 0345, c	c, bc 0955-1600, c, r 1650-1705, c, rr 2050-2300
12		c, ir_0 0530-0600, c, id	id, c, r_0 1055-1130, bc
13		c, ir 0240-0540, bc, PR from 0850	PR until 0905, bc, pr_0 1940-2015, bc
14		pr_0 0000-0020, bc, b, bc	c, pr_0 1005-1020, bc, c from 1110, iR 1130-1250, bc, c, rr 1340-2320
15		rr 0015-0220, c, pr_0 0615-0625, b	b
16		b	b
17		c, rr from 0630, r_0r_0 from 0745	r_0r_0 until 1020, ir_0, rr 1200-1515, c, ir 1640-1850, b
18		b until 0715, c, pr_0, bc from 0820	bc, b 1145-1420, bc
19		b	b, bc from 1610, c from 1645, tlr from 2340
20		tlr_0 until 0110, c, ir 0330-0820, ir_0	ir_0, c, rr 1115-1240, c, bc from 1340, pr 1745-1750, bc
21		c, r_0r_0 from 0645	ir_0, R from 1020, rr 1050-1150, bc, b from 1345
22		bc, c from 0815	bc, c from 1430
23		c, bc from 0730	b, bc from 1445
24		c	c, bc from 1220, c
25		bc, c	c, bc from 1100
26		c	c, b from 1100
27		bc, c from 0550, pr 0700-0710, bc	b, c from 1745
28		c, ir 0350-0545, b	bc, pr 1210-1225, bc, tlr 1445-1500, pr_0 until 1535, c, b from 1615
29		b, bc from 0830	bc
30		c	c, b 1515-1745, c, r_0r_0 from 2335
31		rr until 0420, ir_0 until 0815	c, ir_0, c, bc 1630-1650, c

ALL STATIONS should dispatch this RETURN as soon as possible after the end of the month, preferably not later than the 3rd - to:	Meteorological Office Met O 3a (Stations in England and Wales)	Superintendent Meteorological Office Edinburgh (Stations in Scotland)	Senior Meteorological Officer Belfast (Stations in N. Ireland)	Site or instrument changes and remarks (note any important changes this month)	*Column notes 53 Ground without snow or ice cover 54 Ground with snow or ice cover 69 Enter in total box the number of occasions of code fig. 1 or 5 for the month 70 Enter in total box the number of occasions of code fig. 4, 5, 6 or 7 for the month

Signed Martin W. Huxley Observer

Date 2nd June 1986

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F.14

STATION BIDSTON OBSERVATORY D.C.N.N. 7307 MONTH MAY YEAR 1986

Date	Barometric pressure at mean sea level in millibars and tenths	WEATHER DIARY (MIDNIGHT TO MIDNIGHT) Before 0900 GMT	After 0900 GMT
01	10215	Sunny and clear, cloud increasing.	Continuous sunshine until 1900 hrs. Very dry and warm conditions.
02	10084	Thick haze with sunshine breaking thro'.	Hazy and warm & generally cal...
03	10046	Very hazy with weak sunshine latterly.	Cloud increasing to give showers 1300-1400 & 1600-1780 hrs; Skies clearing.
04	09999	Cloudy with fresh ESEly breeze developing.	Continuing windy with bright periods and showers between 1200 & 1400 hrs; further showers 1900 hrs.
05	10025	Rain and drizzle 03/0900 hrs.	Sunny during afternoon with further showers 1945 – 2230.
06	10052	Generally fine and sunny.	Variable cloud, sunny periods; shower 1750 – 1805.
07	10004	Periods of light rain or drizzle throughout.	Cloud decreasing, occasional sunshine with thunderstorm 1730-1830 & mod. to heavy rain thro' to 2025.
08	10081	Showery with some sunshine latterly.	Frequent heavy showers with heavy hail shower at 1540; bright periods, cloudy night.
09	10131	Damp with showers & overcast skies.	Generally overcast with light rain; Occ. sunshine in early pm; damp, mild night.
10	10047	Showery with fresh Wly breeze.	Windy with occasional sunshine & brief light showers; Thunder 1430
11	10084	Windy with light rain 03 – 0450; 07-08	Light drizzle clearing than sunny and clear; rain developing late evening.
12	10020	Light showers; conditions becoming brighter.	Sunny and dry with fresh Wly breeze.
13	10047	Variable cloud and very dry with sunshine.	Continuing very dry with long bright periods; mod. rain 2210 – 2310
14	10054	Damp with sunshine latterly.	Shower 1115 – 1145; Very clear with bright intervals / dry, calm night.
15	10061	Dull, occasional drizzle, cloud variable.	Bright and very clear with fresh NWly breeze; fine night.
16	10159	Calm and very clear with early sunshine	Very clear, Lake District visible with continuous sunshine until 1830.
17	10113	Mainly dull with occ. rain.	Continuing dull with showers; sunny between 1700 & 1900 hrs.
18	10124	Cloudy and dry, occ. sunshine.	Clear and sunny from 1000 hrs. with mod. WSWly breezes.
19	10220	Fine and clear, calm.	Clear with long sunny periods; solar halo at 1500 hrs; dry, mild night.
20	10100	Thunder 0520 with mod. showers.	Overcast and showery; calm with sunny periods from 12 noon; cloud increasing at night.
21	09950	Wind increasing with showers.	Mod to fresh NWly breeze and frequent showers alternating with sunshine.
22	10116	Dry and fine with early sunshine.	Clear and sunny throughout (until 1950) Continuing dry and mild
23	10143	Dry and fine with early sunshine.	Clear with mainly continuous sunshine. Solar halo noted at 1500 hrs / Fine night.
24	10190	Light showers at first then fine & sunny.	Intermittent sunshine, variable cloud with moderate rain between 1700 & 1900 & 20/2100
25	10168	Cloudy, occ. rain, dull conditions.	Weather brightening towards noon with sunshine continuing to early evening; wind freshening.
26	10145	Becoming showery by 0400 hrs; sunny later.	Skies clearing, very dry with long sunny periods; fine night.
27	10045	Cloudy with occ. rain; brighter later.	Mainly continuous sunshine until evening; winds reaching gale at 1200; max. gust 62 at 1147; wind dropping.
28	10170	Light WNWly breeze; occ. rain & sunshine.	Continuous sunshine with gentle NWly breezes
29	10255	Fair and sunny, variable cloud.	Intermittent sunshine, gentle to mod. NWly breezes.
30	10282	Cloudy with sunshine latterly.	Variable cloud, sunny periods. Moderate continuous rain from 2030.
31	10171	Continuous rain.	Overcast and dull with further showers between 1430 & 1625; cloudy night.
	31330·1 = 1010·6		

ALL STATIONS should dispatch this RETURN as soon as possible after the end of the month, preferably not later than the 3rd - to:	Meteorological Office Met O 3a (Stations in England and Wales)	Superintendent Meteorological Office Edinburgh (Stations in Scotland)	Senior Meteorological Officer Belfast (Stations in N. Ireland)

Site or instrument changes and remarks (note any important changes this month)

Vandals smashed grass min. 2nd May (nighttime)

Replacement 93913 put in service on 3rd.

*Column notes
53 Ground without snow or ice cover
54 Ground with snow or ice cover
69 Enter in total box the number of occasions of code fig. 1 or 5 for the month
70 Enter in total box the number of occasions of code fig. 4, 5, 6 or 7 for the month

Signed Sylvia Asquith Observer

Date 3/6/86

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P. 15

Royal Meteorological Society Field Study Courses on Weather

COURSES IN 1987

Weather Under Sail 16-23 May 1987 Fee £200
Directed by Mr Richard Ebling, Cardiff Weather Centre
Run in conjunction with the Island Cruising Club

Sailing from Salcombe in Devon the course takes place aboard the Club's 86ft classic Edwardian schooner which has berths for 8 plus Course Leader, Skipper and Mate, not forgetting a full-time cook. The destination will be the waters of the English Channel and you will learn not only about meteorology afloat but also about sailing a gaff rigged schooner, from measuring weather elements to influencing the ship's course on the basis of your forecast.

Mountain Weather 1-7 August 1987 Fee £131
Drapers' Field Centre, Betws-y-Coed, Gwynedd
Directed by Mr Terry Spalding and Mr Rodney Blackall, Meteorological Office

This is a course for all who like to roam in the hills. It consists of some lectures, do-it-yourself forecasting and field work amidst the beautiful scenery of Snowdonia.

Understanding Weather 7-14 August 1987 Fee £140
Malham Tarn Field Centre, Yorkshire
Directed by Dr Keith Weston, University of Edinburgh
and Dr David Warren, British Antarctic Survey

A course in which you are immersed in the weather and all things meteorological in the beautiful surroundings 1300ft up in the Yorkshire Dales. A full week's programme of talks, outdoor work and films includes learning about weather satellites, a forecasting competition and the launching and tracking of hydrogen-filled balloons.

Weather Science and Weather Forecasting 19-26 August 1987 Fee £138
The Leonard Wills Field Centre, Nettlecombe Court, Somerset
Directed by Dr Bob Riddaway, European Centre for Medium Range Weather Forecasts
and Dr Geoff Jenkins, Department of the Environment

Would you enjoy learning how to understand weather charts and make your own local forecast? — to track weather balloons, to measure high altitude winds? — and to be involved in lots of other weather activities, all in the informal atmosphere of a beautiful old country house in the Exmoor National Park? Then this is the course for you.

Weather and Bird Migration 6-11 September 1987 Fee £74.50
Gibraltar Point Field Station, Skegness, Lincolnshire
Directed by Mr Malcolm Walker, University of Wales Institute of Science and Technology
and Dr Al Venables, University College, Cardiff

A course for bird watchers who wish to study the ways in which bird migration, populations, flight patterns and breeding habits depend upon weather and climate. Talks will be informal and illustrated liberally with diagrams and slides. Part of each day will be spent in the field on the Gibraltar Point Nature Reserve.

Weekend Courses

Understanding Mountain Weather 6-7 June and 27-28 June 1987
Directed by Mr D. J. George, Meteorological Office, in conjunction with the
Sports Council (No previous knowledge needed)

Weekend courses for those who go into the mountains for work or leisure, including leaders of parties and those working towards Mountain Leadership qualifications, Duke of Edinburgh awards, and 'O' Level Meteorology. Includes one field trip and informal lectures.

Bookings (including deposit of £25, deducted from course fee of £65) to: National Centre for Mountain Activities, Plas-y-Brenin, Capel Curig, Gwynedd.

For further details of the above courses please write, stating your specific interest, to:
The Executive Secretary, Royal Meteorological Society, James Glaisher House,
Grenville Place, Bracknell, Berkshire RG12 1BX

CO-OPERATING OBSERVERS COURSES

Four courses are to be held in 1987 at the Meteorological Office College, Shinfield Park, Reading. The College is fully residential with free accommodation and food provided. Travelling expenses are also reimbursed. The dates of the courses are:-

CO2 2-6 March 1987
CO3 6-10 April 1987
CO4 22-26 June 1987
CO1 7-11 Dec 1987

The last two courses CO4 and CO1 will be most suitable for agro - meteorologists.

USE OF WEATHER DATA

THE ADVISORY SERVICES BRANCH (LEGAL SECTION)

USE OF DAILY DATA SUPPLIED BY THE CLIMATOLOGICAL NETWORK

The daily reading of met instruments, measuring rainfall etc is probably very pleasant on a warm Summers morning. However, in the depth of Winter, with the winds icy blast cutting through the thickest of coats, and deep snow drifts hiding the elusive grass min thermometer, it is not something to look forward to with pleasure.

But to the legal section of the Advisory Services Branch of the Met Office the information is of vital importance. Notwithstanding its long term importance in assessing the climate, the information has a very immediate use.

The legal section uses the information to assess the affect of the weather on legal and insurance problems. The most common of these are insurance queries, car accidents, damage to property etc but a few are concerned with serious crime.

In recent months a number of enquiries have dealt with cases involving murder, rape and arson. These enquiries have sought answers to such questions as when would icicles have formed between November and March? Could icicles have formed on a particular night and lasted well into the day? Were temperatures low enough over night in Wales for diesel oil to freeze in a Land Rover? In murder cases,information is often requested by forensic scientists to help determine the time of death. Since January 1986 the section has dealt with over 40 enquiries on serious crime and, in every one, use has been made of the climate data from one or more climat stations.

For many of the enquiries the nearest station is usually a daily climat station. Using this information combined with other daily data stations and the nearest hourly data station enables the section to make a good estimation of the weather conditions at the site of the incident. For example, snow depth, rainfall and state of ground can give a very good indication of road conditions. Rainfall totals help to pinpoint areas of heavy rain.

The weather diary can also be an invaluable source of information especially if the start and finish time of any weather is noted.

The legal section is not the only section within the Advisory Services Branch that uses the daily data. Other sections answer questions and problems from schools, commercial organisations and the general public.

The members of the enquiry sections owe a large vote of thanks to all the voluntary observers for their dedication and enthusiasm.

The Met Office
Advisory Services
Room 222
London Road
Bracknell

The Department of Health and Social Security "Exceptionally Cold Weather Payments Scheme"

An "exceptionally cold weather payments scheme" is operated by the Department of Health and Social Security. The object of the scheme is to provide an extra cash benefit to help those in need pay for extra fuel used during winter periods of "exceptionally cold weather". For this winter the DHSS will make payments under this scheme if the mean Monday-Sunday temperature (ie the mean of the 7 daily mean temperatures) for a given region reaches or falls below *-1.5 Celsius. The temperature deemed to be representative of that region will be measured by a met station which submits returns to Bracknell on a daily basis. The Met Office will be using data from approximately 60 synoptic and auxiliary stations in support of the DHSS scheme. The DHSS require the mean Monday-Sunday temperatures on the Tuesday following the 7 day period in question in order that they can notify their regional offices which in turn will publicise when and if claims for the "exceptionally cold weather payment" can be submitted. This requirement for the Met Office to distribute the temperature data quickly unfortunately precludes using observations from those climat stations who make returns to Bracknell, Edinburgh or Belfast using Metform 3208B.

The Met Office sincerely hope that climat stations will not be bothered by the media or general public regarding the "exceptionally cold weather payments scheme". Indeed every effort has been made to discourage such approaches. It is, however, inevitable that some of you will be approached for temperature data in respect of the exceptionally cold weather payments scheme. How you respond to such requests is up to you. You can refer the enquirer to the appropriate address or telephone number given below. If you normally answer enquiries then I ask that you advise the enquirer that data from your station are not being used in determining whether a period of "exceptionally cold weather" has occurred, and again point out that further advice is available from the addresses given below or indeed the local DHSS Office.

Thank you for your co-operation.

Meteorological Office
Met O 3b
London Road
Bracknell
Berks
RG12 2SZ
Tel: Bra 420242
Ext 2285/2720

The Superintendent
Meteorological Office
231 Corstorphine Road
Edinburgh
EH12 7BB
031-334-9721

The Senior Met Officer
Belfast Weather Centre
Progressive House
1 College Square East
Belfast
BT1 6BQ
0232-228457

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*This figure has now been changed to zero degrees Celsius.

ORDERING EQUIPMENT

It is a fact of life that accidents, unfortunately, will happen from time to time when you are out making your observations. For instance the maximum thermometer may one day fly from your grasp when resetting it (and knowing your luck will land on the only paving slab in the enclosure) or a wrong step may render the grass minimum thermometer completely shattered. This in itself is bad enough but to then lose several days or weeks data until a replacement arrives is almost as annoying.

Although we cannot prevent accidents happening we can at least help speed delivery of the replacement thermometer, rain measure etc if you follow the ordering procedure below.

1. Ring your order through to us quoting if applicable an order number. The telephone number is Bracknell (0344) 420242 ext 2266/2727.

2. Send in your confirmation letter or order to us at the address below.

Director General
Meteorological Office
Met O 1e (Climat)
Eastern Road
Bracknell, Berks
RG12 2UR.

Please do not send orders direct to the Met. Office Stores which incidentally are on the other side of town from us. This will only cause delay as out stores staff will have to send the order to us so we can raise the necessary paper work before the order can be actioned.

If you follow steps 1 and 2 this will certainly help cut down your waiting time, assuming of course the item requested is in stock. I would like to take this opportunity to apologise to those observers who have ordered various items in the past and have subsequently had to wait several weeks and I'm afraid in some cases months before we could supply them. For instance we have had problems with the manufacturers who supply us with thermometer screens, rain measures and some thermometers which has caused some long delays in the recent past. These problems have now been overcome and we hope will not arise again.

LETTERS TO THE EDITOR

Hastings Health Resort Station

Dear Sir,

I read with some regret that the Newsletter for Climatological Observers is now to be issued only yearly. From its inception I had hoped that more correspondence would have been received from voluntary observers, such as myself, either of general interest or, more particularly, to raise any queries or problems that had arisen or to seek guidance and advice.

I was very pleased to see the diagrams and instructions in the last issue (October 1985) relating to maximum and minimum thermometers. I would welcome further such articles covering other instruments generally is use and even some on more specialised equipment which some observers may have.

In anticipation of being the first of many, I set out below a brief history of my Health Resorts Station and a few of the problems encountered in recent years.

I took over as Borough Meteorologist in September 1974, but recorded observations commenced at Hastings in 1875. These records relate to maximum and minimum temperatures and rainfall. Sunshine records commenced in 1883. Although supplied to the Meteorological Office, no records were maintained locally and, in order to have a complete picture, my predecessor extracted details of monthly mean temperatures, highest maximum, lowest minimum monthly rainfall and sunshine totals from the Meteorological Office Records at Harrow in 1948.

For the period 1875 to 1944 the only signigicant absence of records is for sunshine between June 1944 and February 1947, which was as a result of the recorder being damaged by enemy action. Since 1948 records have been started or maintained of all readings taken on a daily basis with monthly totals and means etc. compiled. These records cover all details submitted on Metform 3208B.

Additions to instrumentation not in use before 1948 are, sea temperature (1951), duration of rainfall (1956-1978 Casella Natural Siphon), (1979 Tilting Siphon). Concrete minimum temperature (1983).

This station is currently situated in Public gardens and is run and maintained by the Borough Council. The sun recorder is sited on the roof of a nearby building and a weather kiosk is situated on the sea front displaying details of the past and current weather.

Few problems are experienced at the main enclosure, apart from infrequent acts of vandalism which are generally confined to objects being thrown at the various instruments.

The biggest problem occurs with the sunshine recorder, or more specifically whilst changing the cards. Being situated on a flat roof close to the sea front, it is an ideal resting place for sea gulls and a nest is regularly built about 6m. from the recorder. From the time that eggs are laid the observer on duty is continually swooped on by at least one gull and intensity of attack increases when the young birds are being raised but still unable to fly. A broom held aloft prevents any possible direct contact but the other obvious hazard has been known to score a direct hit!

Various sites in Hastings have provided rainfall data which has been included in Symons's British Rainfall since at least 1878. A copy of British Rainfall for that year is in my possession and it lists no fewer than nine different stations in Hastings and St. Leonards. Hastings was one of the original contributors to the Meteorological Office Monthly Weather Report in 1884 and also has the distinction of a mention in the Guiness Book of Weather Facts and Feats as the place with the sunniest month ever recorded in the British Isles at 384 hours in July 1911.

Finally I would welcome comments from yourself or other observers on the extent to which the weather diary section of Metform 3208B is, or should be completed in Beaufort letters for the days weather.

Returns from Hastings have included a fairly comprehensive coverage in this respect for at least the past thirty-eigth years.

Yours sincerely

R.A.GARRAD

BOROUGH METEOROLOGIST.

SILSOE (BEDS) AGRO-MET STATION

Dear Sir

May I say how very much I regret the reduction in frequency of 'Newsletter'. Though I expect it is all a matter of finance the value of 'Newsletter', would, I believe, be greatly increased if it were issued more often; yearly intervals almost eliminates continuity.

Yours faithfully

A Hunter

EDITOR - The following is an extract from a letter sent in reply to Mr Hunter.

This decision was reluctantly made after careful consideration of the costs and staff time involved in the production of the Newsletter. In addition when the Newsletter was first introducted in 1978 it was hoped that the observers in the co-operating scheme would use it to discuss any observational problems they encountered; unusual phenomena observed; or indeed any aspect of their station or daily routine which might be of interest to their fellow observers. However, apart from the initial enthusiasm we have found the number of letters received for inclusion in the Newsletter are now very few and far between.

BEAMINSTER (DORSET) CLIMAT STATION

An extract from a letter by Mr T Naish.

Dear Mr Brooks

As I said to you on the phone I am very sorry that pressure of other work has meant reducing the frequency of the Newsletter. It seems a pity that MO staff get so little response from the volunteers. Any contact with Bracknell is a stimulus, especially for those of us who cannot come on the Shinfield courses, and the Newsletter is read and reread I assure you. Mrs Allen said to me "this is a club", and I have certainly found all the officers very patient and helpful, which must be an effort - considering how most professionals feel towards amateurs.

I will attempt to do as you ask and write something for the Newsletter, perhaps about how I found out about the climatological observer scheme - but leaving out my first introduction to forecasting, the 'weather house' of sixty or more years ago - however it is a long time since I did any essay writing.

Again many thanks.

Yours sincerely

T Naish

WEATHER IN THE UNITED KINGDOM   JULY 1985 TO AUGUST 1986

July 1985

The month started dry and sunny in most areas although fronts affected northern and western areas at times. On the 5th violent thunderstorms in East Anglia and south-east England gave a fall of 40.5 mm of rain at Honington, Suffolk, while Coltishall, near Norwich had a record gust for July at that station of 65 kn, the more remarkable as the mean wind for the hour was only 6 kn and after the first quarter of an hour the wind was calm for most of the rest of the hour. Rain at Wimbledon was described as 'torrential' and amounts measured in the Merton, Surrey area were about 20 mm, while a few miles to the west at Heathrow there was only 2 mm measured. Hailstones of more than 2 cm in diameter were measured at Coltishall. There was a fall of 53 mm at Romford, Greater London and extensive flooding at the Theatre Royal at Norwich. Southern areas were largely dry until the 13th when it became very warm and further thundery showers developed with hail. These thunderstorms were cleared on the following day by much cooler, fresher air. The next week was unsettled with depressions tracking across central and southern areas giving changeable weather. After three dry days from the 23rd to 25th when the temperature in central southern England reached 30°C, further thunderstorms developed and the month ended cool and unsettled.

August 1985

The weather in August was dominated by an unsettled westerly airstream. On the first two days fronts alternated with transient ridges of high pressure, but a depression developed off south-west England on the 3rd and crossed the British Isles on the 4th giving widespread heavy rain. Liphook, Hampshire had a fall of 47 mm and the warmest place on that day, Wester Super Mare, Avon had a maximum temperature of only 19°C.. The depression moved into the North Sea and filled on the 5th, followed by a weak ridge and frontal system crossing the British Isles between the 6th and 8th. On the 11th a deep complex depression tracked north-eastwardss from south-west England giving heavy rain in many western and northern areas. Several places reported over 20 mm in 12 hours and some 30 mm in 24 hours. On the 14th coningsby, Lincolnshire had an unusual gust of 81 kn on the passage of a squall as a cold front merged with a thunderstorm to give a massive downdraught. Further frontal systems affected most parts up to 26th and 27th, when an area of high pressure formed over most of England and Wales, giving a few days of mostly dry, warm weather in south and east England. By the end of the month, however, a further depression had brought more rain to all parts of Great Britain.

September 1985

The generally cool,unsettled weather continued into September with a series of depressions and fronts crossing the whole of the British Isles. Northern and western areas had most of the heavy rain, with 33 mm at Mumbles on the 2nd. A depression cleared northern England on the 4th to be replaced by a ridge of high pressure which built up across England and Wales to give southern areas a period of dry, settled weather. However, low pressure remained centred to the north-west of Great Britain and fronts still affected the more northern and western areas. From the 10th all parts were crossed by a cold front moving south-eastwards: on the 14th the afternoon temperature in London reached only 16°C compared with 27°C on the 12th. Southern areas came under the influence of a ridge of high pressure again with afternoon temperatures becoming above average; on the 17th it was 24.5°C at Manston, kent, but northern and western areas were still affected by depressions. On the 19th the ridge declined and all areas had some rain, especially on the 21st/22nd. High pressure returned on the 23rd bringing a rapid rise in temperature in southern England with the highest temperature of 27.6°C being recorded at Cavendish, Suffolk on the 30th.

October 1985

Unsettled showery weather with thunder at times affected all parts of Great Britain until the 10th. The month started very warm everywhere, but very hot on the 1st in many central, southern and eastern areas of England. The previous highest October temperature (28.9°C) was exceeded by Waddon, Greater London with 29.5°C and March, Cambridgeshire with 29.4°C. Stainburn, Cumbria reported hailstones over 20 mm in diameter on the 4th. The wettest day was the 6th when over 70 stations recorded falls of over 50 mm in a day, the greatest amount being 114 mm at Waen Sychlwch, Dyfed. Trecastle, Powys recorded 64 mm in 12 hours out of a total of 81 mm for the day. The heaviest falls were all in western areas, mainly in Wales of south-west England. After a somewhat windy 11th, from then until the end of the month it was dry and sunny in most parts although also rather dull in some places with a large amount of anticyclonic cloud persisting, and when the cloud did break overnight fog formed. By the end of the month it was very cold on the near continent and on the 30th Jersey Airport had its coldest night with a temperature of 1.9°C and at St Helier, Jersey on the following afternoon the temperature rose to only 5.8°C; these temperatures set new long-term October records for Jersey. A cold front gave some rain on the 30th and 31st with a fall of 42.4 mm in about two and a half hours at St Helier and there were reports of flooding on the island.

November 1985

After the warmest, driest October for seven years, November was the coldest over central England since 1965. There were strong northerly winds and snow as far south as South Wales, giving a light cover of snow over many hills in the north. Further snow showers occurred until the 12th, especially in eastern coastal areas. Then followed severe night frost and some fog patches before more rain was brought to central England by a small eastward-moving depression. As a ridge was developing from the continental anticyclone prolonged cold weather became established over Great Britain until almost the end of the month. At first there were periods of snow in the south and east as well as fresh eastly winds and by the 19th temperatures remained below 0°C all day. From the 17th to 25th Wales and western parts of England had an almost completely dry period, and some places remained dry until the 29th. Heavy rain came to Cornwall on the 28th, spreading to all parts of England and Wales in the next two days. Shawbury, Shropshire had a night temperature of -12°C on the night of the 28th/29th, the lowest November temperature at the station since records began in 1945.

December 1985

It was exceptionally mild for the first two to three weeks of the month, but after Christmas a cold spell affected all parts of England and Wales, with some snow in places. The first five days were very mild, but with rain at times in the west and north. From the 6th to 10th it was less mild with frost and fog. Milder weather returned on the 11th and persisted until after Christmas, but there were gales and periods of rain especially in northern and western areas on the 12th and in the south-west on the 23rd. Much colder weather reached northern areas on about the 25th with wintry showers, but in the south it was cloudy with heavy rain and thunderstorms, and many central and southern areas had floods, with many roadsmade impassable and thousands of hectares of farmland under water in low lying areas. The colder conditions eventually spread over the whole of England and Wales giving snow in many areas and some persistent severe frosts. Despite the cold spell later in the month it was the mildest December generally since 1974 and a number of long-term records were broken: Mount Batten, Plymouth had 16.1°C on the 2nd, the highest December temperature there since records began in 1921 and 16..8°C at Kew Royal Botanic Gardens also on the 2nd was the highest December temperature recorded at Kew this century.

January 1986

It was a wet month everywhere with one and a half times the normal rainfall in many places. Despite this, most places had more sunshine than usual. Temperatures were below normal from East Anglia, the Midlands and Wales northwards, but were near or slightly above normal in southern districts. The month began and ended with cold spells and in between there were milder interludes. Frontal systems crossed all parts during the first week, bringing rain and snow to most places, with up to 20 cm of level snow in the Midlands on the 8th. Milder weather from the west gradually spread to all parts by the 10th; it then remained unsettled until the 14th. A quieter, colder spell l;asted until the 19th, when a deepening depression brought gales to much of England and Wales with heavy rain in places. There was further frontal activity until a temporary ridge of high pressure crossed the British isles during the 25th and 26th. finally an occlusion on the 27th brought rain and snow preceding a more general area of rain, sleet and snow from central England northwards, which gave 25 cm of level snow in some central and northern areas on the 28th/29th. These outbreaks of wintry weather died away on the 30th as north-easterly winds became established.

February 1986

February 1986 was the coldest February over England and Wales as a whole since 1947 and was the second coldest this century. Temperatures were well below normal everywhere. After a rainy start to the month as the wind veered slowly to become easterly it became colder. A small depression over southern England on the 5th and 6th brought snow to south-eastern and central southern areas of England, with up to 15 cm of level snow reported on the Isle of Wight on the 7th. Snow showers gave more lying snow in Kent and Essex on the 8th. From the 8th to 12th there was persistent frost and parts of central and northern England had freezing fog which was rather slow to clear. On the 12th and 13th fronts brought strong winds to the far west and as they move south-eastwards there was a little sleet in the south-west. After that there were snow showers in all eastern areas, while the rest of Great Britain remained mainly dry. From the 20th to 23rd fog again developed over eastern areas. On the 21st there was heavy snow in north-east England; on the 22nd and 23rd a depression in the Bay of Biscay with fronts close to the south coast brought snow to south-west England and the Channel islands with up to 18 cm of level snow in Devon and Cornwall and drifts of nearly a metre and a half on the moors. The remainder of the month was frosty, but mainly dry and sunny.

March 1986

This was an unsettled and windy month. it began very cold with persistent frost throughout the day in most of southern England and East Anglia. In many areas the 1st was the coldest day since records began; on the 2nd the maximum temperature at Huddersfield was only -2°C. Late on the 3rd eastward-moving fronts brought rain, with over 50 mm at Nantmor, Gwynedd, and on the following day rising temperatures brought a rapid thaw of low-lying snow everywhere. After a few days of brighter weather with scattered showers there was persistent fog along parts of the south coast on the 8th. Fog and rain then alternated until on the 20th wet windy weather spread across the whole United Kingdom. Although the next two days remained windy with rain or showers, sheltered places in the east of England were quite sunny; Bridlington, Humberside had almost 11 hours sunshine on the 23rd. That evening a deep depression brought rain to the south-west and crossed all areas during the 24th. Northern England had some heavy snow and remaining areas of England and Wales had overnight rain and showers by day with longer periods of sleet or snow in central areas. It was very windy in the south of England with gusts of 60 kn to 70 kn in many places. The wind remained strong until the end of the month with sunshine and showers or longer spells of rain. Hail, snow and thunder were widely and frequently reported.

April 1986

April was colder than normal throughout England and Wales, with mean temperatures some 2°C below the average in many places. It was also wet, with frequent wintry showers. The 7th and 8th were particularly cold days with maximum temperatures barely reaching a few degrees above freezing. Exton, Somerset only reached 1°C on the 7th. Fronts moving northwards from France brought a period of more prolonged sleet and snow to England and South Wales, together with widespread hill and coastal fog. On the 9th and 10th southward-moving fronts brought further showers. During the next two weeks low pressure dominated the weather, with wintry showers or longer periods of rain, sleet or snow and gales in some northern areas. On the 19th and 20th an active frontal system crossed all areas bringing heavy falls of rain. Nantmor, Gwynedd reported 72 mm on the 19th. The second period of low pressure from the 20th to 25th was remarkable for the number of reports of thunderstorms, often accompanied by hail. Thunder was heard on five days in London, making it one of the most thundery Aprils ever recorded in London. Fog was infrequent during the month, although the 24th to 28th was a foggy period. During the last week a milder south-westerly airstream returned and temperatures recovered to about normal with the highest temperature 18.1°C at Southampton, Mayflower Park and Liphook, Hampshire nearly reaching 18°C on three consecutive days (the 25th to 27th), although there were some sharp frosts in central areas. April 1986 was the coldest in central England since 1963.

May 1986

The beginning of the month saw temperatures rise to 20°C or more in parts of England, but the general trend towards wet and cold weather was soon repeated. As a ridge of high pressure extending from Scandinavia slipped away eastwards an area of low pressure developed in the south-west approaches and it deepened to dominate the weather over England and Wales for a week. Spells of heavy rain and thunderstorms came to many places, especially on the 20th, when warm moist air moved northwards from France ahead of a weak cold front slowly advancing from the west. Some severe thunderstorms were reported and the heavy rain brought local flooding to ground which was already sodden, especially in parts of the Midlands and the north of England. On the 20th 43 mm was recorded at Coningsby, Lincolnshire. Rainfall amounts were above average in most areas. There was an improvement fvor the Bank Hol;iday on the 26th with quite a lot of sunshine in places, but with a fresh, blustery wind. Deep depressions periodically brought gales to many western areas but nothing compared to the 27th, when gusts of more than 60 kn were recorded in many places in northern England. At Point of Ayre, Isle of Man 65 kn was recorded and the high-level station at Great Dun Fell, Cumbria recorded 80 kn.

June 1986

A predominantly north-westerly airflow brought occasional rain or showers to most places during the period 4-7 June; except in some eastern areas where heavy showers occurred, amounts of rain were small. On the 8th to 10th a series of frontal disturbances moving north-eastwards brought rain to many areas. Wales and northern and western England had heavy rain at times. A showery trough of low pressure brought quite heavy rainfall to parts of England and Wales on the 10th and 11th. From the 11th to 15th high pressure predominated and many places stayed dry, although some rain came to north-west England and North Wales on the 12th and 13th. High temperatures up to 29°C on the 16th (Hampton, Greater London 29.0°C, London Weather Centre 29.1°C) combined with a cold front moving into western areas to giver thundery outbreaks later over western areas of Wales, north-west England and locally in East Anglia. Much of north-east England had heavy thundery rain on the 17th, but rising pressure behind the cold front brought dry weather to most other areas. Further thundery outbreaks occurred on the 23rd after early widespread fog in southern England. The church at Steart, near Bridgwater was badly damaged when the tower was struck by lightning and crashed through the roof. During the last few days of the month high pressure over the North Sea dominated the weather, bringing a southerly airflow with very warm air, and temperatures rose rapidly. On the 27th Liphook, Hampshire and Southampton, mayflower Park reported 31.2°C and 31.7°C respectively and on the following day Rustington, West Sussex reported 32.0°C. On the 30th some places in the London area were reporting over 30°C. With the warm weather, however, came thundery showers. They were most prevalent in the Channel Islands and south-west England and resulted in among other things hailstones of about

4 cm diameter in South Wales, floods in Torquay, Devon and a bungalow struck by lightning at Par, Cornwall. At Tuxford, Nottinghamshire on the other hand, the A1 road surface buckled in the heat.

July 1986

July started warm, dry and sunny in most places, but it became unsettled and cool with outbreaks of rain or showers. On the 8th there were outbreaks of thundery activity over central, southern and eastern areas of England which gave very heavy rain locally and flooding was reported in the Maidstone, Kent area. The weather then settled into a pattern of dull misty conditions on western coasts and bright, mainly sunny weather in the east. Some places in the east became hot, the temperature at Cromer, Norfolk rising to 31°C on the 16th. On the 20th rain and drizzle spread northwards, giving heavy rain on the 21st/22nd, followed by heavy showers on the 23rd, the latter accompanied in places by thunderstorms with hail. Further rain crossed all parts during the next few days, and a depression gave rain on the 28th and 29th in all areas. The rain was heavy at times in the west and 45 mm fell at Nantmor, Gwynedd on the 28th. There were further showers in the last two days.

August 1986

The month was generally cool and unsettled with periods of rain or showers and thunderstorms, sometimes accompanied by strong winds. On the 2nd caravans were blown over and camping equipment damaged by strong winds in North Wales and in Kent and Sussex. Strong cross winds caused delays to traffic on some motorways. In the London area there was widespread flooding and the temperature fell to 12°C, well below the seasonal average. On the 10th the temperature reached 26°C at East Hoathly, E. Sussex; there were some heavy thunderstorms in southern England with many reports of lightning damage and localized flooding. Daily rainfall amounts of 41 mm were reported at Madley and at Great Malvern, both in Hereford and Worcester. After a couple of mainly dry days northern areas in particular were affected by the passage of a depression, amounts of rain in the south being generally small. Heavier rain occurred in southern areas on the 18th and a further depression on the 21st and 22nd gave some heavy thundery rain in the Midlands and southern England. The worst of the weather came on the 25th and 26th as the declining former hurricane Charley became reinvigorated as its warm air came into contact with cold polar air as it approached the British Isles. The depression then moved slowly north-eastward across England and Wales, bringing widespread heavy rain and strong winds. On the 25th most places reported daily rainfall of over 30 mm. Gale force winds blew over six carriages in the Fairbourne Light Railway, near Dolgellau, Gwynedd. Homes and roads were flooded as torrential rain and gales swept across Wales. In the none hour period commencing at 09 GMT on the 25th Brawdy, Dyfed recorded 76 mm of rain. In England there were reports of extensive flooding and strong winds. Among the highest daily falls of rain on the 25th were 88 mm at Moel-y-Crio, Clwyd, 87 mm at Wilsden, South Yorkshire, and 81 mm at Brawdy. gusts to 65 kn were reported on the 26th at Brixham, Devon. The depression moved slowly north-eastwards bringing a cold northerly airstream in its wake and further rain or showers in most places. The depression finally blew itself out in the North Sea on the 30th. It was the coldest August in central England generally since 1963. North Wyke, Devon reported the coolest, dullest and second wettest August since records began there in about 1960. England and Wales had the wettest August Bank Holiday Monday on record with general values of rainfall of 40 mm for England and Wales, 37 mm for England, and 60 mm for Wales.